

# Prevalence And Socio-Demographic Profile Of Hypertensive Patients In A Nigerian General Out-Patients' Department.

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## Abstract

### Background

Hypertension is an important risk factor for cardiovascular diseases with a prevalence of about 25% in the adult population in Nigeria. Inhabitants of Lagos are generally believed to be more affluent and better informed than those living in other parts of the country. The effect of the presumed higher standard of living on control of hypertension is unknown. Methods This cross-sectional study evaluates the impact of socio-demographic factors on control of hypertension in patients living in Lagos. Results Prevalence of hypertension was found to be 36.03% with good blood pressure control observed in only 21.21% of the patients. Literacy level was high 72.56%, but contrary to popular belief, monthly income was found to be generally low with 44% percent of all subjects studied earning less than N10,000.00 per month. Conclusions Control of hypertension in the studied population is poor, possibly because of low earning capacity of these subjects.

## INTRODUCTION

Hypertension is an important risk factor for cardiovascular diseases. Population studies have put the prevalence of hypertension at about 25% in the adult population in Nigeria<sup>(1,2,3)</sup>. A high percentage of these hypertensive patients have poor control of their hypertension. For instance, Familoni et.al<sup>(4)</sup> found good control of hypertension in only 32.7% of the hypertensive patients attending the medical out patients' department of their hospital in Sagamu, South West Nigeria. A similar finding of 35.8% good blood pressure control in a population of 224 hypertensive subjects was found by Katibi et.al<sup>(5)</sup> in Ilorin in the middle belt region of Nigeria. This finding of poor blood pressure control in the majority of hypertensive patients is thought to be due largely to poverty and lack of awareness.

Lagos is a metropolitan city and there is a general belief that the inhabitants of Lagos are more affluent and possibly more informed than those living in the other parts of the country. Whether this perceived better socio-demographic profile of inhabitants of Lagos affect blood pressure control is not known.

This cross-sectional study evaluates the prevalence of

hypertension and socio-demographic profile of hypertensive patients attending the general outpatients' department of LASUTH Ikeja, Lagos, with the aim of assessing the impact of their financial strengths, occupational characteristics and social habits on control of their hypertension.

## PATIENTS AND METHODS

Four hundred and fifty eight (458) patients attending the GOPD between 1<sup>st</sup> June 2006 to 31<sup>st</sup> August 2006 were studied.

Their vital signs were taken by the research assistant after obtaining patients' consent. Relevant data on annual income, occupation, current diagnosis, treatment for hypertension and social habits, were obtained from the patients' hospital records as well as direct questioning of the patients. These were recorded on a standard data entry form.

## DEFINITIONS

Hypertension was taken to be present if the patient has documented systolic blood pressure  $\geq 140$  mmHg or diastolic blood pressure  $\geq 90$  mmHg and is on antihypertensive medications.

Good control as at the time of assessment is defined as blood

pressure reading of less than 140/90mmHg.

## STATISTICAL ANALYSIS

Statistical analysis was performed using the SPSS version 17 package. A p value  $\leq 0.05$  was taken as being statistically significant.

## RESULTS

Four hundred and fifty eight (458) patients were studied, of which 165(36.03%) were hypertensive with a mean age of  $45 \pm 14.6$  (1SD) compared with 293(63.97%) non-hypertensive subjects with a mean age of  $40.3 \pm 15.5$  (1SD). [Table I]

Thirty five (21.21%) had good blood pressure control while control of hypertension was poor in 130(78.79%) of the subjects.

## LEVEL OF EDUCATION

Level of education was recorded in 164 hypertensive subjects and 283 non-hypertensives. 35(21.34%) out of 164 hypertensive subjects compared with 38 (13.43%) of 283 non hypertensive subjects, had no formal education. 79(48.17%) hypertensives had either primary or secondary education, while 50(30.49%) had tertiary education. There was no statistically significant difference between the hypertensives compared with the non-hypertensive patients.  $X^2 = 18$ ,  $p > 0.05$ . [Table II]

Thirty six (21.95%) hypertensive patients were assessed as having a good control of their hypertension, while 128(78.05%) had a poor blood pressure control. There was no statistically significant difference between the 4 levels of education strata with respect to blood pressure control.  $X^2 = 6.7$ ,  $p > 0.05$ . [Table III]

## EMPLOYMENT STATUS/MONTHLY EARNINGS

Employment status was recorded in 146 hypertensive subjects. 107(73.29%) out of 146 hypertensive subjects with known employment status were employed compared with 180 (68.18%) of 264 non hypertensive subjects. There was no statistically significant difference in the employment status of hypertensive subjects compared with the non-hypertensives.  $X^2 = 2.6$ ,  $p > 0.05$ .

Good blood pressure control was observed in 22(15.07%) of the employed hypertensive patients compared with 8(5.48%) of the unemployed subjects. This was however not statistically significant.  $X^2 = 0.319$ ,  $p > 0.05$ . [Table IV]

Eleven (7.53%) of the 146 hypertensive subjects with known employment status were engaged in skilled/professional employments (2 Engineers, 5 teachers, 2 policemen, 1 surveyor and one computer operator) while the remaining 135 (92.47%) had unskilled employment (Trading, catering, barbing, factory work etc.). Majority (46 subjects, 31.51%) of the subjects were traders.

Two hundred and three (44.4%) subjects studied earned below N10,000.00 per month While 146 subjects(31.8%) earned between N10,000.00 to N20,000.00. Only 109 (23.8%) subjects earning more than N20,000.00 per month. None of the studied subject earned more than N50,000.00 per month. Table V shows the relationship of blood pressure control with monthly earnings of 118 hypertensive subjects with known monthly earning. There was no statistically significant difference between the compared groups.  $X^2 = 1.3767$ ,  $p > 0.05$

## SOCIAL HABITS

Ten (7.19%) out of 139 hypertensives with data on smoking were active smokers compared with 4(1.52%) of 263 non hypertensive subjects. There was a significant difference between the two groups.  $X^2 = 8.9$ ,  $p < 0.05$ .

Ninety three (56.36%) out of 165 hypertensive patients with records on alcohol compared with 161(59.40%) of 271 non hypertensives, were teetotals. 72(43.64%) hypertensive subjects took alcohol. There was no significant difference between the two groups  $X^2 = 7.8$ ,  $p > 0.05$ . Alcohol intake was mild to moderate in the alcohol group.

## Figure 1

Table I: AGE / SEX DISTRIBUTION OF HYPERTENSIVE AND NORMOTENSIVE STUDY SUBJECTS

		0 - 19	20 - 39	40 - 59	60 - 79	>80	Total
HYPERTENSIVES	M	2(0.44%)	24(3.71%)	17(3.71%)	15(3.28%)	0(0.00%)	58(12.66%)
	F	2(0.44%)	28(6.11%)	57(3.71%)	17(3.71%)	3(0.66%)	107(23.36%)
NORMOTENSIVES	M	7(1.53%)	68(14.85%)	43(9.39%)	17(3.71%)	3(0.66%)	138(30.13%)
	F	7(1.53%)	72(15.72%)	52(11.35%)	21(4.59%)	3(0.66%)	155(33.84%)
TOTAL		18(3.93%)	192(41.92%)	169(36.90%)	70(15.28%)	9(1.97%)	458(100.00%)

$X^2 = 17.88$ ,  $p > 0.05$

**Figure 2**

**Table II: LEVEL OF EDUCATION OF HYPERTENSIVE SUBJECTS COMPARED WITH NORMOTENSIVE SUBJECTS**

		No Education	Primary	Secondary	Tertiary	Total
HYPERTENSIVES	M	10(2.24%)	9(2.01%)	15(3.34%)	23(5.15%)	57(12.75%)
	F	25(5.59%)	25(5.59%)	30(6.71%)	27(6.04%)	107(23.94%)
NORMOTENSIVES	M	11(2.46%)	19(4.25%)	40(8.95%)	50(11.19%)	120(26.85%)
	F	27(6.04%)	29(6.49%)	60(13.42%)	47(10.51%)	163(36.46%)
TOTAL		73(16.33%)	82(18.34%)	145(32.43%)	147(32.89%)	447(100.00%)

$\chi^2 = 18, p > 0.05$

**Figure 3**

**Table III: LEVEL OF EDUCATION OF HYPERTENSIVE SUBJECTS AND ASSESSED ADEQUACY OF BLOOD PRESSURE CONTROL**

	No Education	Primary	Secondary	Tertiary	Total
GOOD BP CONTROL	9(5.49%)	8(4.88%)	4(2.44%)	15(9.15%)	36(21.95%)
POOR BP CONTROL	26(15.85%)	26(15.85%)	41(25.00%)	35(21.34%)	128(78.05%)
TOTAL	35(21.34%)	34(20.73%)	45(27.44%)	50(30.49%)	164(100.00%)

$\chi^2 = 6.7, p > 0.05$

**Figure 4**

**Table IV: EMPLOYMENT STATUS OF HYPERTENSIVE SUBJECTS AND ASSESSED ADEQUACY OF BLOOD PRESSURE CONTROL**

	Good BP control	Poor BP control	Total
Employed	22 (15.07%)	85(58.22%)	107(73.29%)
Unemployed	8(5.48%)	31(21.23%)	39(26.71%)
Total	31(20.55%)	115(79.45%)	146(100%)

$\chi^2 = 0.319, p > 0.05$

**Figure 5**

**Table V: MONTHLY EARNINGS OF HYPERTENSIVE SUBJECTS AND BLOOD PRESSURE CONTROL**

	Less than N10,000.00	N20,000.00 – less than N50,000.00	N20,000.00 – less than N50,000.00	Total
Good BP control	16(13.56%)	7(5.93%)	6(5.08%)	29(24.58%)
Poor BP control	38(32.20%)	28(23.73%)	23(19.49%)	89(75.42%)
TOTAL	54(45.76%)	35(29.66%)	29(24.57%)	118(100%)

Monthly income in employed subjects / stipend in unemployed subjects were not recorded in 28 subjects

$\chi^2 = 1.3767, p > 0.05$

## DISCUSSION

Hypertension is the most prevalent non communicable chronic disease in Nigeria with a prevalence of between 10 to 25% in the Nigerian general population<sup>(1,2,3)</sup>. Our finding of a prevalence rate of 36.03% in the General Out Patient's Department (GOPD) could be explained on the basis of the tertiary nature of the institution, as hypertensive patients are constantly referred to the hospital for treatment by general practitioners in addition to Lagos being a metropolitan city. Expectedly, the proportion of hypertensive subjects in each age group increased inline with the age groups. There was no statistical significant difference between the ages of hypertensive and the normotensive subjects. [Table I]

The higher number of hypertensive female subjects in the study probably reflects a higher GOPD clinic attendance of females than males, rather than an increased prevalence of hypertension in females compared to males.

## LEVEL OF EDUCATION

The influence of level of education on awareness and medication compliance in hypertensive subjects is complex, as other factors such as cultural beliefs, religion, peer influences and personality do modify the inclination of subjects to comply with medications<sup>(6,7,8)</sup>. Although more than 70% of the studied subjects have one form of formal education or the other, however, level of education appears not to affect control of hypertension in these patients. [Table III]

This finding has been observed by other investigators. For instance, Al-Sowielem and colleague<sup>(9)</sup> in a study of Saudi Arabian patients, found that compliance is lower in the educated patients compared with the uneducated subjects. This finding was attributed to the strong believe of the

subjects that emotional stress is the most important aetiological factor in hypertension and that anti-hypertensive drugs should be stopped once they achieve blood pressure control. Thus, the importance of health education for all cadres of patients irrespective of educational background can not be overemphasized.

### **EMPLOYMENT STATUS/MONTHLY EARNINGS**

One hundred and seven (73.29%) out of 146 hypertensive subjects with known employment status were employed compared with 180 (68.18%) of 264 non hypertensive subjects. This was not statistically significant.  $X^2 = 2.6$ ,  $p > 0.05$ . [Table IV]

Only 11 (7.53%) of the 146 hypertensive subjects with known employment status were engaged in skilled/professional employments. Majority of the subjects (46 subjects, 31.51%) were traders. The remaining 89 (60.96%) subjects were in unskilled employments with limited financial capability. Therefore, it is not surprising that close to 50% of the subjects earned less than N10,000.00 (Ten thousand Naira monthly) This finding is similar to that of Katibi et.al in the middle belt region of Nigeria.<sup>(5)</sup> [Table V]

The low monthly earning of these patients is bound to have a negative impact on the ability of the patients to purchase expensive antihypertensive drugs when prescribed. The finding of a low earning capacity on medication compliance in hypertensive patients, has been documented by other authors<sup>(10,11,12)</sup>. Physicians working in this type of setting need to be aware of this important factor in their prescription pattern, as patients who are unable to buy the prescribed drugs would fail to comply with their medications.

### **SOCIAL HABITS**

Ten (7.19%) out of 139 hypertensives with data on smoking were active smokers compared with 4 (1.52%) of 263 non hypertensive subjects. This was statistically significant  $X^2 = 8.9$ ,  $p < 0.05$ . The small number of subjects in the study limited further evaluation of the effect of smoking on control of hypertension.

Mild to moderate alcohol intake was recorded in 72 (43.64%) hypertensive subjects. Hypertensives were not significantly different compared with non hypertensives with regards to the use of alcohol.  $X^2 = 7.8$ ,  $p > 0.05$ . Further studies are however required to evaluate the extent and severity of other cardiovascular risk factors in this population.

### **CONCLUSION**

Our study focused on the impact of social and demographic factors on control of hypertension in a population of patients that are generally believed to be more affluent than patients living in other parts of the country. Contrary to the popular belief, majority of the studied patients were low income earners and had poor blood pressure control in spite of being fairly well educated. This is a reflection of the general low socioeconomic status of most of the inhabitants of the country.

The recognition of this should change pattern of anti-hypertensive medication prescriptions by doctors practicing in the region. More emphasis would be given to cost considerations and the ability of the patient to purchase the prescribed medications. This hopefully will improve compliance with a positive impact on blood pressure control in the patients.

The impact of these findings on medication compliance and target organ damage due to presence of co-existing cardiovascular disease risk factors in this population needs further evaluation.

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